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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/003,116	12/06/2001	Mark Tuttle	M4065.0363/P363-A	5771
24998	7590	04/07/2004	EXAMINER	
DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP 2101 L STREET NW WASHINGTON, DC 20037-1526			BEREZNY, NEMA O	
			ART UNIT	PAPER NUMBER
			2813	

DATE MAILED: 04/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/003,116

Applicant(s)

TUTTLE, MARK

Examiner

Nema O Berezny

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 87-99 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 87-99 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 87, 89-90, and 93 are rejected under 35 U.S.C. 102(b) as being anticipated by Fritz (3,743,978). Fritz discloses a method of forming a structure for supporting an integrated circuit chip, which chip may be affected by external magnetic fields, said method comprising: forming a substrate (Fig.8 el.31,34,36,32); forming a layer of magnetic field shielding material (el.33) over said substrate; forming an insulating layer (el.35) over said layer of magnetic field shielding material; providing a support surface (el.30) for an integrated circuit chip, said substrate, layer of magnetic field shielding material, insulating layer and support surface forming part of a chip carrier; and supporting an integrated circuit chip (el.21) with said chip carrier, said chip carrier having a top and bottom surface [**claim 87**]. Fritz also discloses providing a second layer of magnetic field shielding material (el.34) embedded within said substrate of said chip carrier [**claim 89**]; providing a second layer of magnetic field shielding material embedded within a printed circuit board electrically coupled to said chip carrier (Fig.6 el.16; col.3 lines 21-30) [**claim 90**]; and wherein said layer of magnetic field

shielding material comprises a magnetic material selected from the group consisting of ferrites, manganites, chromites and cobaltites (el.33) **[claim 93]**.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 88 and 98-99 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fritz as applied to claims 87, 89-90, and 93 above, and further in view of Dahringer et al. (5,689,878). Fritz does not disclose providing a second layer of shielding material on top or on the bottom surface of said chip carrier. However, Dahringer discloses providing a second layer of magnetic field shielding material (Fig.7 el.52) on top of said chip carrier **[claims 89, 99]**; and providing a second layer of magnetic field shielding material (el.52) on the bottom surface of said chip carrier **[claim 98]**. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to use the top and bottom shielding layers of Dahringer with the method of Fritz in order to provide both a diffusion barrier and EMI shielding (Abstract).

Claims 91-92 and 94-96 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fritz as applied to claims 87, 89-90, and 93 above, and further in view of Tracy et al. (5,902,690). Fritz does not disclose a magnetic memory device, or

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a ferrite consisting of one of Mn, Fe, Co, Ni, Cu, and Mg, or magnetic material comprising a material which includes conductive particles. However, Tracy discloses a magnetic RAM device (title) [**claims 91, 92**]; magnetic material comprising MnFe_2O_4 (col.5 lines 2-8) [**claim 94**]; magnetic material comprising conductive particles (col.5 lines 2-4, 15-30) [**claim 95**]; and magnetic material consisting of one of nickel, iron, and cobalt particles (col.5 lines 2-4, 15-30) [**claim 96**]. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to use the magnetic device and conductive particles of Tracy with the method of Fritz. A magnetic device produces internal magnetic fields which can interfere with other devices within the IC, and a magnetic shield on both the device and substrate protects the IC from both internal and external magnetic fields (Tracy – col.5 lines 16-18). Magnetic material comprising conductive particles such as nickel, iron, or cobalt offers several application methods at a low cost (Tracy – col.5 lines 23-31).

Claim 97 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fritz as applied to claims 87, 89-90, and 93 above, and further in view of Higgins, III (5,639,989). Fritz does not disclose providing a shielding layer on a chip electrically coupled to the chip carrier. However, Higgins discloses providing a second layer of magnetic field shielding material (Fig.1 el.26) formed on a chip electrically coupled to said chip carrier. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to use the shielding material formed on a chip of

Higgins with the method of Fritz in order to protect the device from a wide range of frequencies estimated to be an EMI problem (Higgins - col.7 lines 15-46).

Response to Arguments

Applicant's arguments with respect to claims 87-96 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nema O Berezny whose telephone number is (571) 272-1686. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr. can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NB


ERIK J. KIELIN
PRIMARY EXAMINER